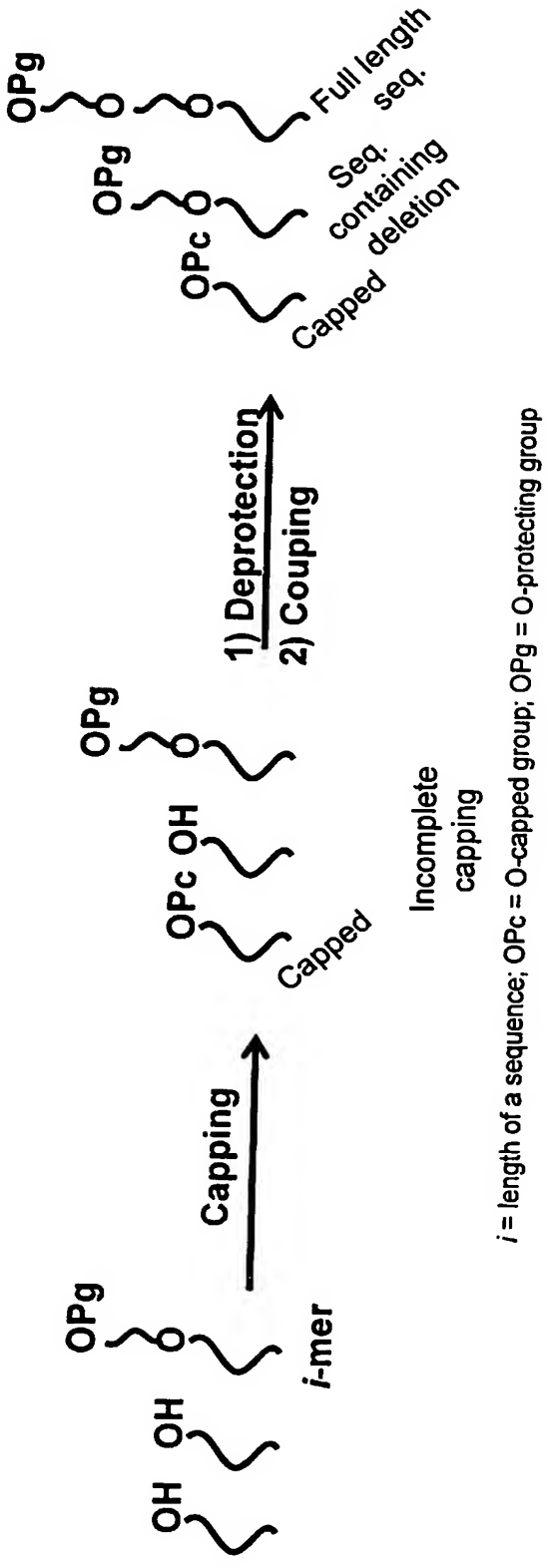

OPg
OH
OH
i-mer
Capping
OPg
OPc OH
Capped
Incomplete capping
OPg
1) Deprotection
2) Couping
OPg
Full length seq.
OPg
Seq. containing deletion
OPc
Capped
i = length of a sequence; OPc = O-capped group; OPg = O-protecting group

FIG. 1

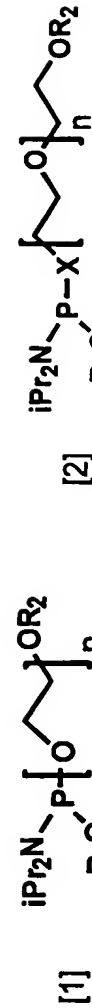
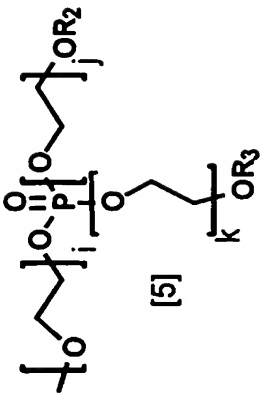
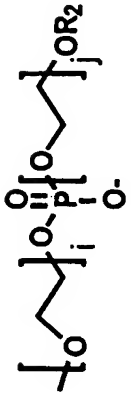


FIG. 2



[5]

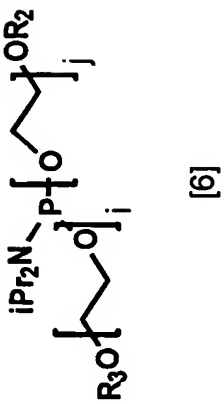


[4]

[3]

$R_2 = CH_3$, alkyl, phenyl, $CONH_2$
n, i, j = 1 – 20

FIG. 3



[6]

R_2, R_3 = CH_3, alkyl, phenyl, $CONH_2$
i, j = 1 – 20

FIG. 4

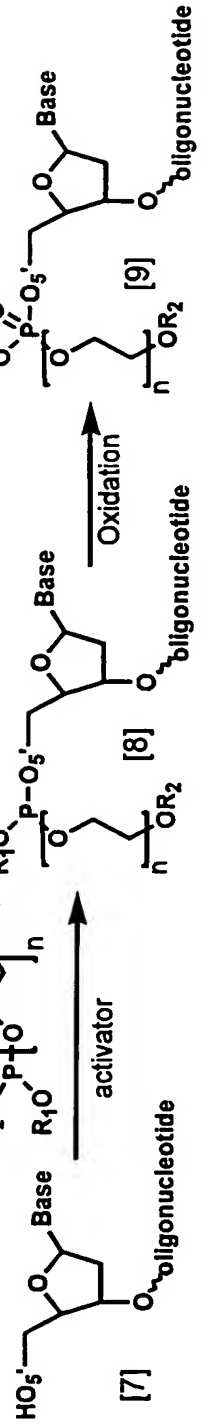
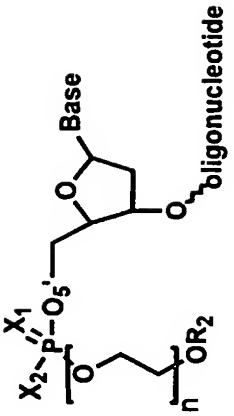

[7]
[1]
activator
[8]
Oxidation
[9]
Base
oligonucleotide
activator: tetrazole; Oxidation: I_2/H_2O;
$R_1 = CH_2CH_2CN$
$R_2 = CH_3$, alkyl, phenyl, $CONH_2$
n = 1 – 20

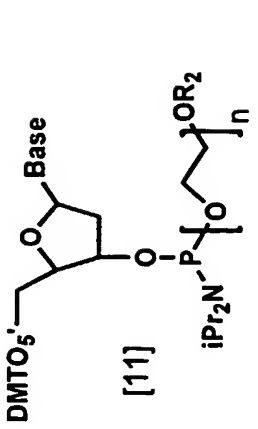
FIG. 5



[10]

X_1, X_2 = O, S
R_2 = CH_3, alkyl, phenyl, $CONH_2$
n = 1 – 20

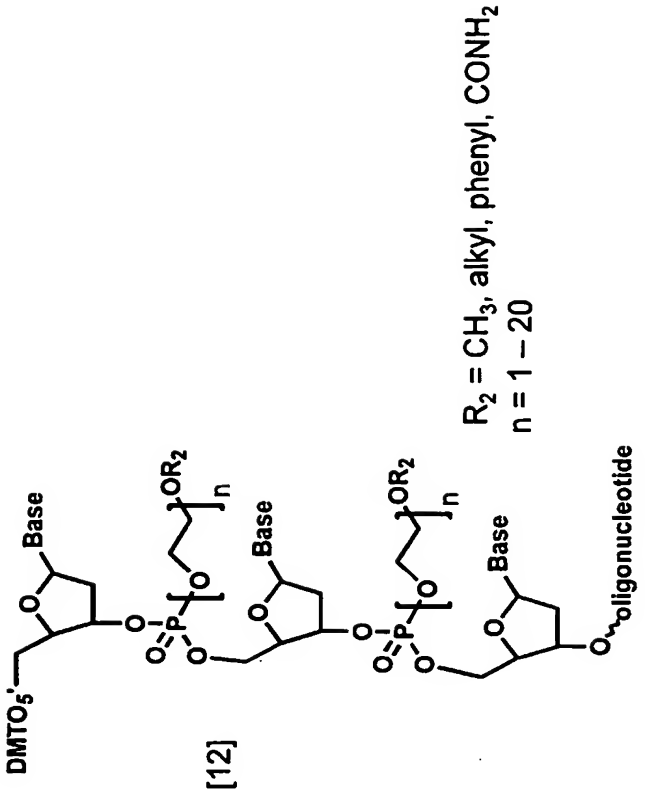
FIG. 6



[11]

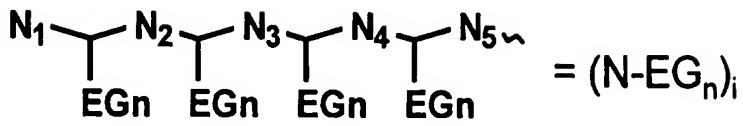
$R_2 = CH_3$, alkyl, phenyl, $CONH_2$
n = 1 – 20

FIG. 7


DMTO5'
Base
OR2
n
oligonucleotide
R2 = CH3, alkyl, phenyl, CONH2
n = 1 – 20

[12]

FIG. 8

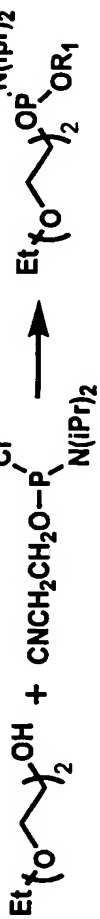
[13] 

$= (N\text{-}EG_n)_i$

[14] $(N\text{-}EG_n)_i$ – oligonucleotide - $(N\text{-}EG_n)_j$

$R_2 = CH_3$, alkyl, phenyl, $CONH_2$, n = 1 – 20; I,j = 1 200
EG = CH_2CH_2O, N_1, N_2, ...N_i are nucleotide residues

FIG. 9



[15] [16] [17]

$R_1 = CH_2CH_2CN$, iPr = isopropyl, Et = ethyl

FIG. 10

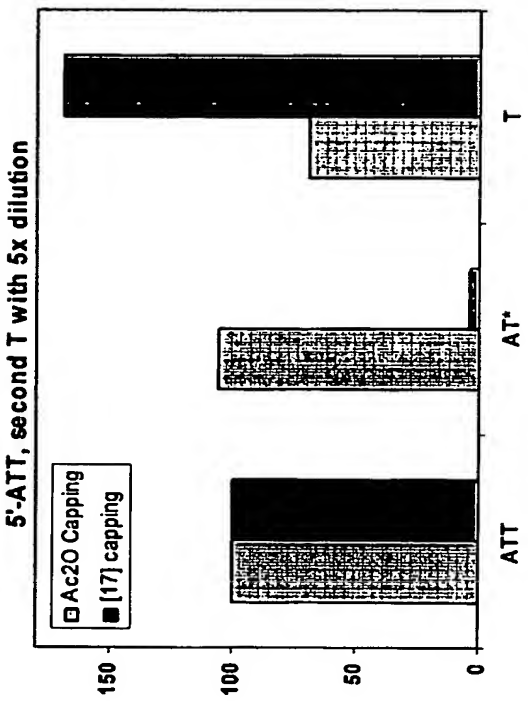

5'-ATT, second T with 5x dilution
Ac2O Capping
[17] capping
150
100
50
0
ATT
AT*
T

FIG 11

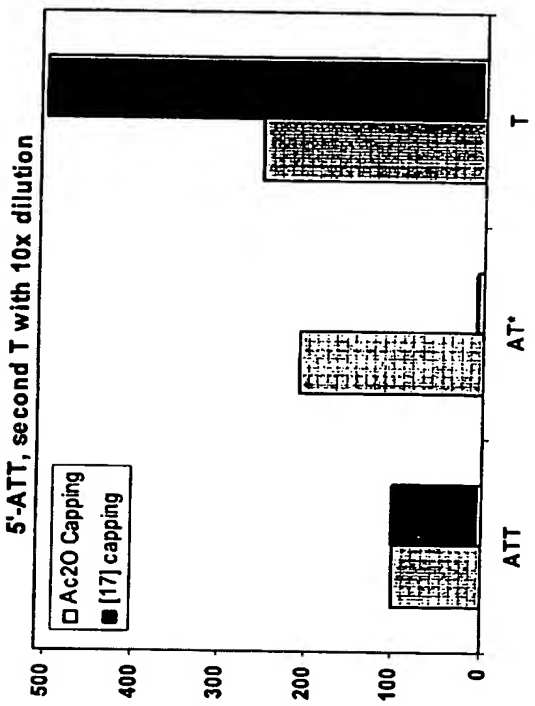

5'-ATT, second T with 10x dilution
Ac20 Capping
[17] capping
500
400
300
200
100
0
ATT
AT*
T

FIG 12

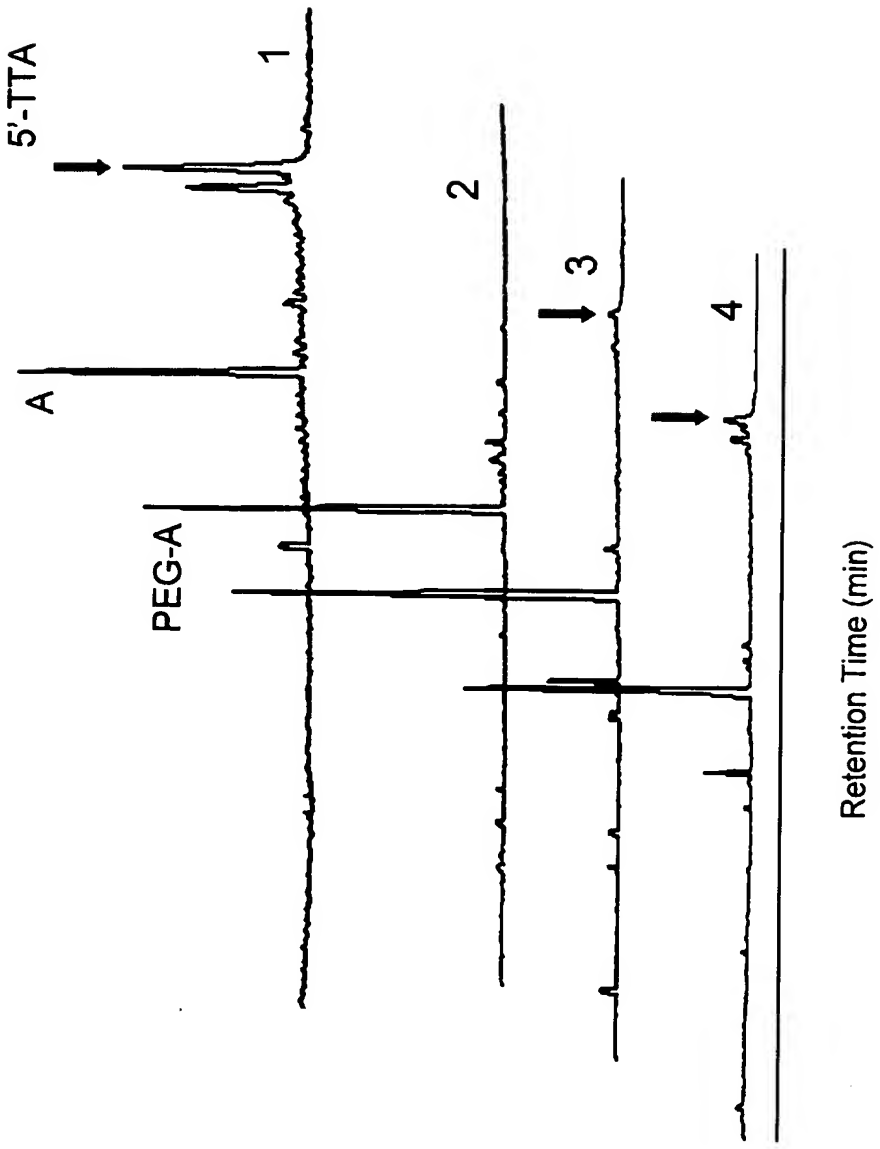
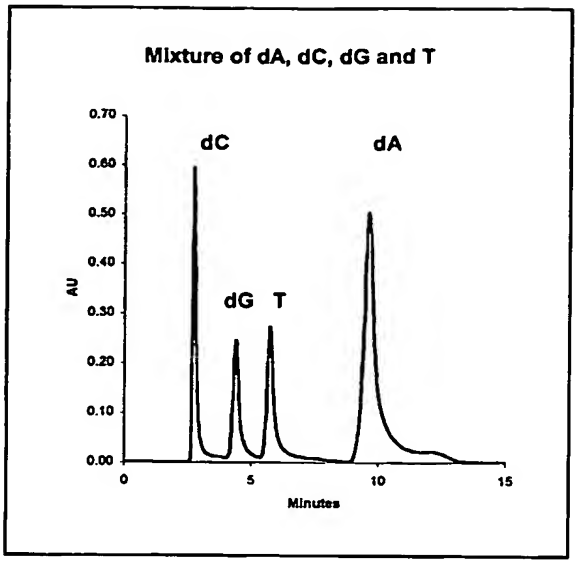


FIG 13

A


Mixture of dA, dC, dG and T
dC
dA
dG
T
AU
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0
5
10
15
Minutes

B

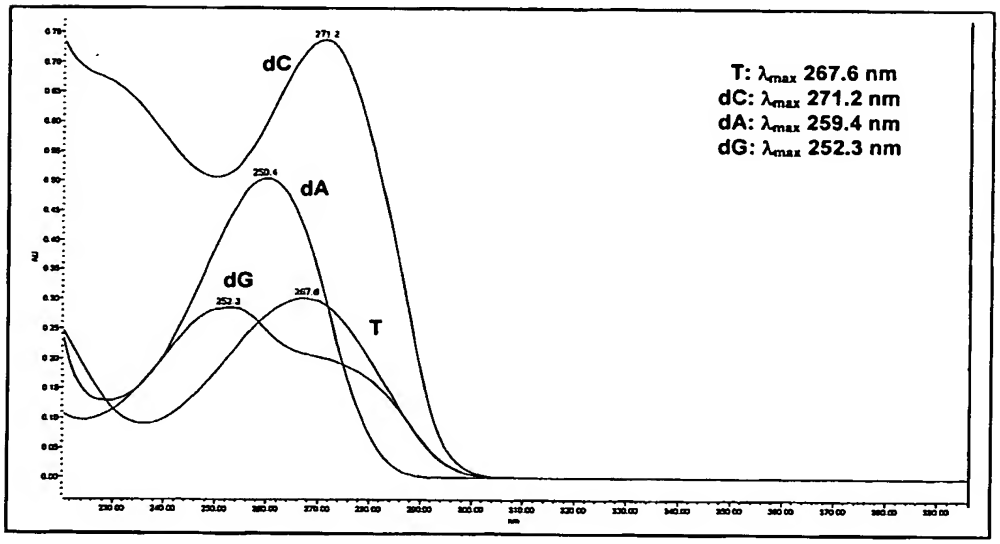

dC
dA
dG
T
T: λmax 267.6 nm
dC: λmax 271.2 nm
dA: λmax 259.4 nm
dG: λmax 252.3 nm

FIG. 14

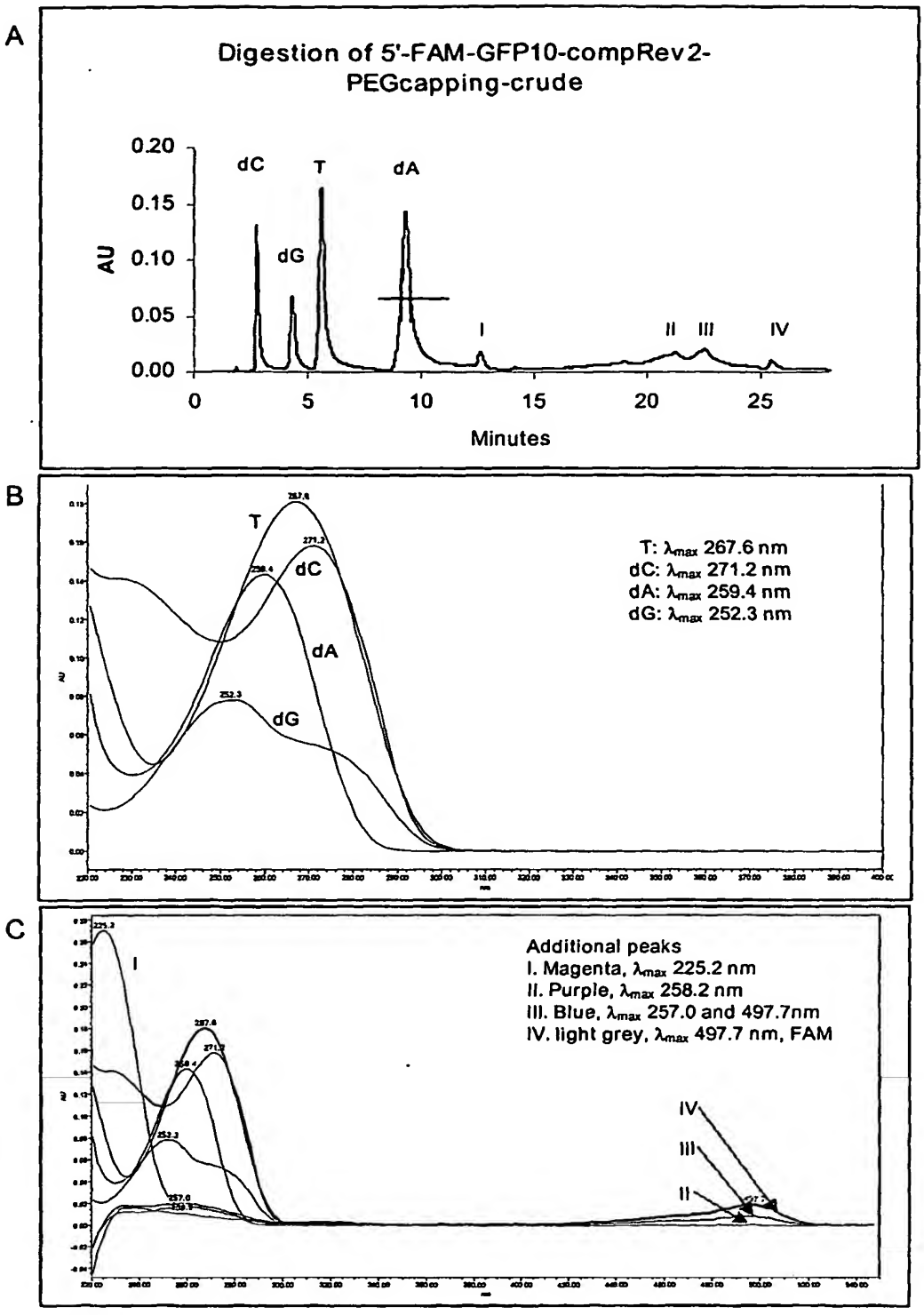
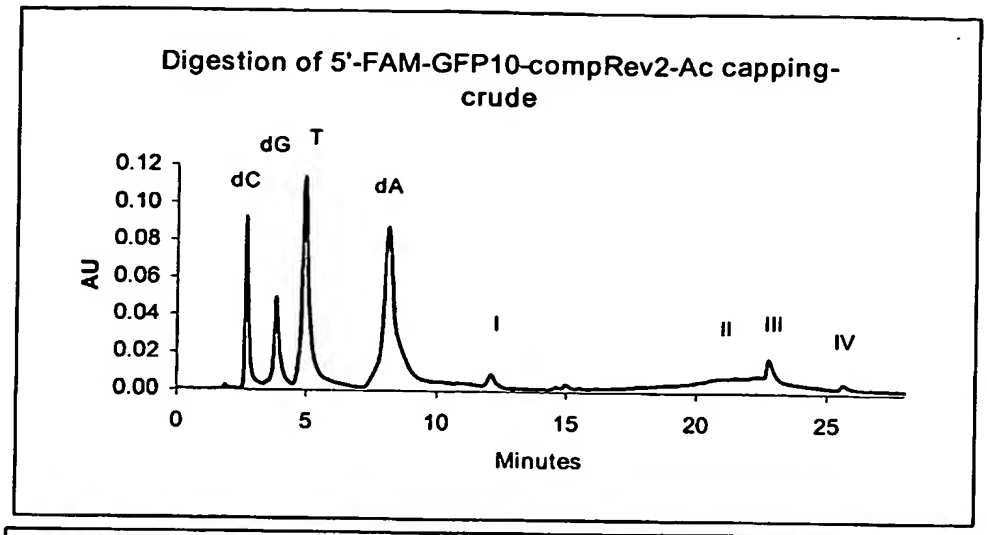
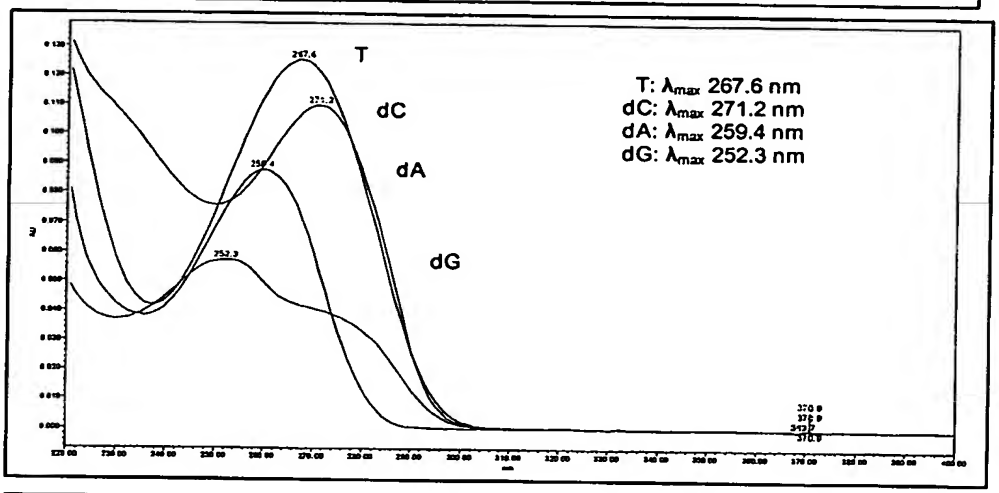

A
Digestion of 5'-FAM-GFP10-compRev2-PEGcapping-crude
AU
0.20
0.15
0.10
0.05
0.00
dC
T
dA
dG
I
II
III
IV
0
5
10
15
20
25
Minutes
B
T
dC
dA
dG
T: λmax 267.6 nm
dC: λmax 271.2 nm
dA: λmax 259.4 nm
dG: λmax 252.3 nm
C
I
II
III
IV
Additional peaks
I. Magenta, λmax 225.2 nm
II. Purple, λmax 258.2 nm
III. Blue, λmax 257.0 and 497.7nm
IV. light grey, λmax 497.7 nm, FAM

FIG. 15

A


Digestion of 5'-FAM-GFP10-compRev2-Ac capping-crude
dG
T
dC
dA
I
II
III
IV
AU
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0
5
10
15
20
25
Minutes

B


T
dC
dA
dG
T: λmax 267.6 nm
dC: λmax 271.2 nm
dA: λmax 259.4 nm
dG: λmax 252.3 nm

C

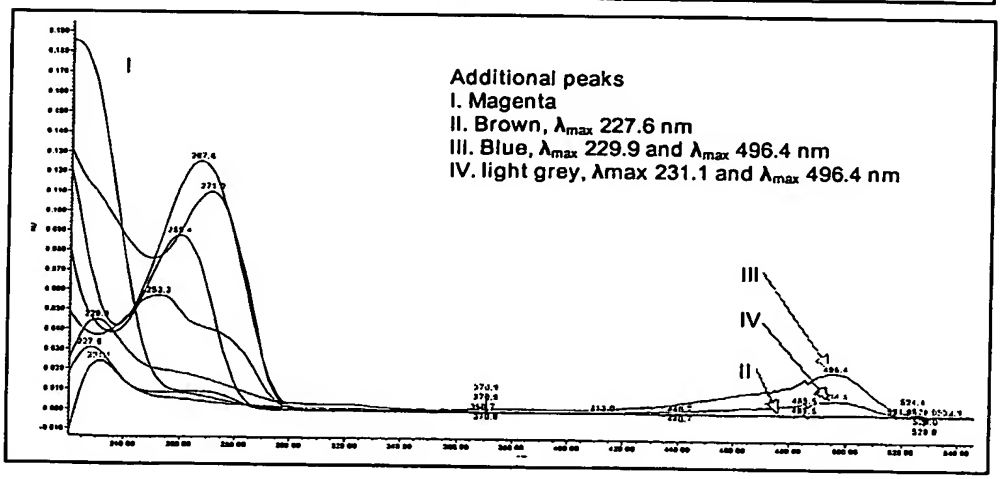

I
Additional peaks
I. Magenta
II. Brown, λmax 227.6 nm
III. Blue, λmax 229.9 and λmax 496.4 nm
IV. light grey, λmax 231.1 and λmax 496.4 nm
III
IV
II

FIG. 16

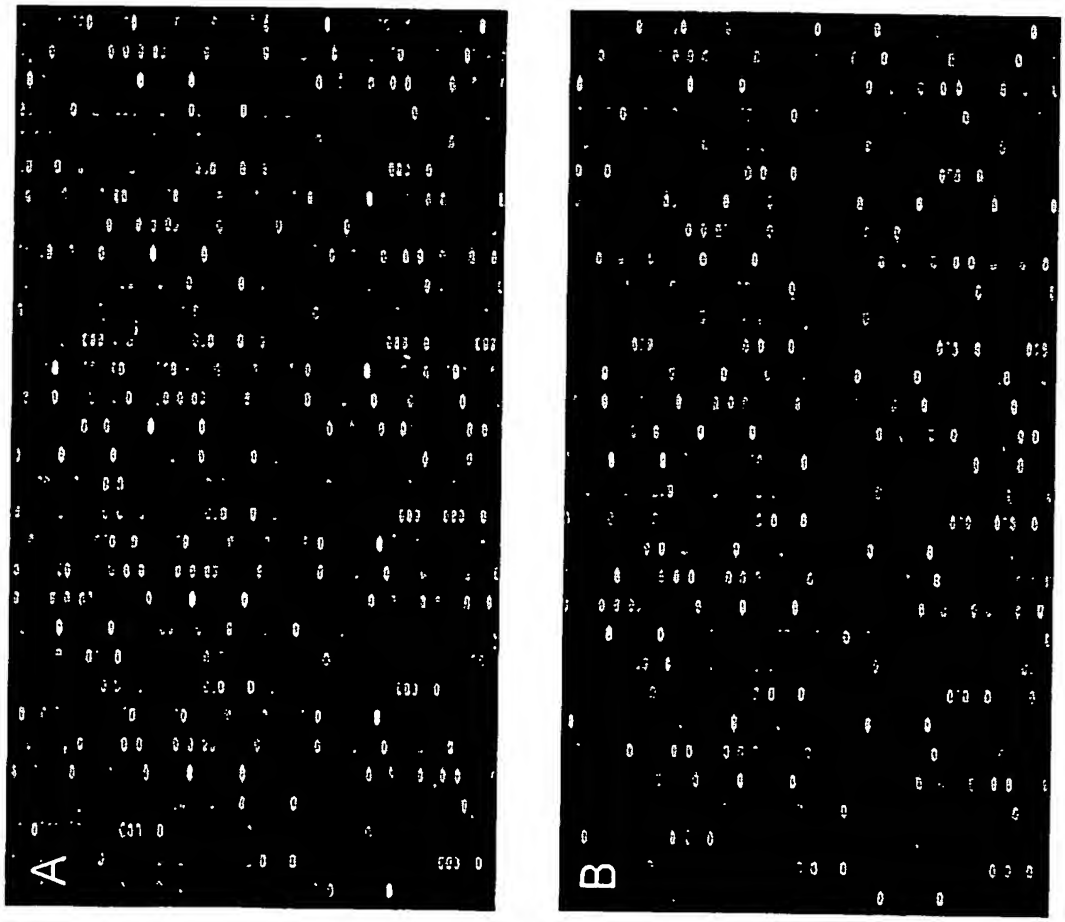


FIG 17